

NON-PUBLIC?: N  
ACCESSION #: 9010290384  
LICENSEE EVENT REPORT (LER)

FACILITY NAME: Haddam Neck PAGE: 1 OF 04

DOCKET NUMBER: 05000213

TITLE: Manual Plant Trip Due to Condensate Pump Degradation and  
Procedural Noncompliance  
EVENT DATE: 09/20/90 LER #: 90-020-00 REPORT DATE: 10/19/90

OTHER FACILITIES INVOLVED: DOCKET NO: 05000

OPERATING MODE: 1 POWER LEVEL: 050

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR  
SECTION:  
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:  
NAME: R. J. Trejo, Engineer TELEPHONE: (203) 267-2556

COMPONENT FAILURE DESCRIPTION:  
CAUSE: B SYSTEM: SD COMPONENT: EXJ MANUFACTURER: X999  
REPORTABLE NPRDS: N

SUPPLEMENTAL REPORT EXPECTED: No

#### ABSTRACT:

On September 20, 1990, at 0715 hours, with the plant in Mode 1 at 50 percent power the B condensate pump was shut down for troubleshooting. The A condensate pump was unable to provide sufficient pressure to the suction of the main feed pump requiring control room operators to manually trip the plant. The root causes of the event consisted of the degradation of the rubber flexible couplings in the condensate pump suction piping to the point that flow was restricted and personnel error since the pump was shut down at a higher power level than that required by procedure. Corrective action included replacing the flexible rubber couplings with stainless steel couplings and re-emphasizing the importance of procedural compliance to all operators. This event is reportable under 10CFR50.73(a) (2) (iv) since it resulted in manual actuation of the Reactor Protection System.

END OF ABSTRACT

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## BACKGROUND INFORMATION

Condensate pumps (EIS Code: P) P-35-1A and P-35-1B increase condensate (EIS Code: SD) pressure from condenser vacuum to approximately 350 psig and in conjunction with a heater drain pump provide the suction supply and required net positive suction head (NPSH) for the two electric main feedwater (EIS Code: SJ) pumps. The main feedwater pumps are provided with a low suction pressure trip at 195 psig. During startup from the recent refueling outage operators noted fluctuating amps and low discharge pressure on the B condensate pump at power levels between 87 and 92 percent. On September 20, 1990, load was reduced to 50 percent power to troubleshoot the condensate pumps.

## EVENT DESCRIPTION

On September 20, 1990, at 0715 hours, with the plant in Model at 50 percent power the B condensate pump was shut down in preparation for isolating the pump for troubleshooting. The A condensate pump was unable to provide sufficient pressure to the suction of the main feed pump resulting in control room operators manually tripping the plant. All systems responded as required with the exception of the following:

1. One control rod bottom light did not light, however, the rod was confirmed on the bottom.
2. The No. 1 turbine control valve had dual position indication lights, however, both turbine stop valves indicated closed and the No. 1 control valve was, in fact, closed with the position indicating lights not functioning properly.

## CAUSE OF THE EVENT

The root causes of this event are the following:

1. Degraded condition of both rubber flexible couplings (one per pump) in the condensate pump suction piping.
2. Personnel error due to procedural non-compliance. Procedure NOP 2.2-1, "Changing Plant Load" requires that one of two operating condensate pumps be shut down between 250 and 230 MWe on a load decrease. The B condensate pump was shutdown at 280 MWe.

A contributing cause to this event was management making the request to remove the condensate pump from service at approximately 50 percent power, unintentionally implying an urgency to do so (although each of the pumps are "half-power" pumps both are required by procedure to be in operation at approximately 40 percent power).

#### SAFETY ASSESSMENT

This event is reportable under 10CFR50.73 (a) (2) (iv) since it resulted in manual actuation of the reactor protection system. Neither the condensate pumps nor the main feedwater pumps serve a safety related function. The low suction pressure trip for the main feed water pumps protects the pumps against running with inadequate NPSH. Had the operators not manually tripped the plant, the main feedwater pumps would have tripped on low suction pressure which would have resulted in an automatic reactor trip due to steam flow and feedwater flow mismatch coincident with low steam generator water level. Decay heat removal following reactor shutdown was accomplished via the steam generators with feedwater supplied by the condensate and main feedwater systems. Had the condensate and feedwater systems been unable to supply the required flow to remove decay heat, the safety related auxiliary feedwater system could have been used. Following the trip, all systems responded as required with the exception of a failed control rod bottom light and dual position indication on one of the turbine control valves. Both of these problems were confirmed by operators to be indication problems only and had no effect on the shutdown of the plant. Based on the above, plant safety was not adversely affected by this event.

#### CORRECTIVE ACTION

Corrective action consisted of the following:

1. The rubber flexible couplings were replaced with stainless steel flexible couplings.
2. The operators involved in this event have been counseled on the importance of procedural compliance. The lessons learned from this event have been reviewed with Operations Department personnel and the importance of procedural compliance has been re-emphasized.
3. Supervision has been counseled on the need to ensure that proper guidance is provided in troubleshooting efforts.

ADDITIONAL INFORMATION

Failed component: Rubber expansion joint

Manufacturer: Protective Coatings Inc. (Proco)

Style No: C-90/100-358CSD-ABB0141-SR

PREVIOUS SIMILAR EVENTS

None

ATTACHMENT 1 TO 9010290384 PAGE 1 OF 1

CONNECTICUT YANKEE ATOMIC POWER COMPANY

HADDAM NECK PLANT

RR#1 o BOX 127E o EAST HAMPTON, CT 06424-9341

October 19, 1990

Re: 10CFR50. 73 (a) (2) (iv)

U. S. Nuclear Regulatory Commission

Document Control Desk

Washington, D. C. 20555

Reference: Facility Operating License No. DPR-61

Docket No. 50-213

Reportable Occurrence LER 50-213/90-020-00

Gentlemen:

This letter forwards the Licensee Event Report 90-020-00, required to be submitted, pursuant to the requirements of Connecticut Yankee Technical Specifications.

Very truly yours,

John P. Stetz

Station Director

JPS/dl

Attachment: LER 50-213/90-020-00

CC: Mr. Thomas T. Martin  
Regional Administrator, Region I  
475 Allendale Road  
King of Prussia, PA 19406

J. T. Shedlosky  
Sr. Resident Inspector  
Haddam Neck

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